
NEW NEARCTIC CRANE-FLIES (TIPULIDÆ, DIPTERA).
PART IV.

BY CHARLES P. ALEXANDER, LAWRENCE, KANSAS.

Family *Tipulidæ*.
Sub-family *Limnobiinæ*.
Tribe *Eriopterini*.

Erioptera (Erioptera) megophthalma, sp. n.

Allied to *E. macrophthalma* Loew, *E. vespertina* O.S., etc.; coloration reddish yellow throughout; antennæ with the scape dark brown, the flagellum pale basally, passing into darker toward the tip; inner margins of the eyes broadly margined with silvery.

Male.—Length 5.5. mm.; wing 4.5–5.2 mm.

Rostrum and palpi dark brown. Antennæ with the scape dark brown, the basal flagellar segments light yellow, passing into dark brown toward the tip. Head with the front and the vertex adjoining the inner margin of the eye silvery white; remainder of head yellowish buff with an indistinct brown median line. Eyes of the male very large, contiguous across the ventral portion of the head, purplish black.

Thorax clear reddish yellow, including the pleura, not brightened on the humeral angles of the mesonotal præscutum (as in *vespertina*). Halteres pale. Legs golden yellow, the apical tarsal segments darkened. Wings with a pale grayish tinge, the veins pale, the costal region yellow.

Abdomen light reddish yellow with long, pale hairs; male hypopygium with the ninth tergite quadrangular, the apex squarely truncated, pleurites long, the dorsal appendage straight, pale, tipped with darker.

Habitat.—Northeastern United States.

Holotype.—♂, Bools Hillside, Ithaca, N. Y., reared from larva, June 3, 1917.

Allotopotype.—♀.

Paratopotypes.—25 ♂s ♀s; paratypes, ♂, Westchester Co., Tarrytown, June 9, 1914 (Frost); Fulton Co., Sacandaga Park, June 18, 1916 (Alexander); Herkimer Co., Indian Castle, June 9–13, 1915, (Alexander).

February, 1918

Type in the collection of the author.

Related to *E. macrophthalma* Loew (Europe). In our fauna closest to *E. vespertina* O.S. in the enlarged eyes of the male sex but differing in the clear, reddish brown coloration of the body, lacking the yellow humeral angles to the præscutum and the bright yellow knobs to the halteres. The male hypopygia are differently constructed in the two species.

E. vespertina is an inhabitant of open swamps and meadowlands, while *E. megophthalma* is characteristic of cool woods and boggy, shaded hillsides. I reared this new species from numerous larvæ, occurring in mud and beneath rotting leaves, associated with other crane-fly larvæ (as *Dicranomyia stulta*, *Molophilus hirtipennis*, *Ormosia innocens*, *Limnophila fuscovaria*, *Rhaphidolabis flaveola*, *Tipula oropecoides*, *T. collaris*, *T. cayuga*, *Bittacomorphella jonesi*, etc.) in the *Symplocarpus* association on Bools Hillside. The larva is curious in the chalky white colour due to the contents of the food-canal showing through the skin; the head-capsule and spiracular-disk are very small.

Tribe *Limnophilini*.

***Lasiomastix subtenuicornis*, sp. n.**

Allied to *L. tenuicornis* O.S.; antennæ of the male elongated; apical cells of the wings pubescent; cell *M*₁ of the wings lacking.

Male.—Length 7 mm.; wing 7.4 mm.

Female.—Length 8.8–9 mm.; wing 8.8 mm.

Rostrum and palpi black, the former slightly pruinose. Antennæ of the male elongated, black, the flagellar segments elongate-cylindrical with a dense, whitish pubescence. Head light gray.

Præscutum brownish gray with three broad, dark brown stripes, the median one not attaining the suture; scutum, scutellum and postnotum blackish gray pruinose. Pleura dark with a clear, blue-gray pruinosity. Halteres yellow, the knobs a little darker. Legs with the coxæ dull yellowish, the two anterior pairs a little pruinose basally on the outer faces; trochanters yellow; femora yellow, passing into brown on the outer third; tibiæ and tarsi dark brown. Wings dusky gray; stigma brownish; veins dark brown; a sparse pubescence in the apical cells of the wings. Ven-

ation: cell R_2 sessile or very short-petiolate; cell M_1 lacking by the fusion together of veins M_1 and M_2 .

Abdomen dark brown, the sternites paler; female ovipositor long, brownish yellow.

Habitat.—Northeastern United States.

Holotype.—♂, Bools Hillside, Ithaca, N.Y., June 4, 1917, (Alexander).

Allotopotype.—♀.

Paratopotypes.—3 ♂s, 2 ♀s, June 4–13, 1917.

Paratype.—♂, McLean, N.Y., May 31, 1913.

Type in the collection of the author.

Readily distinguished from *L. tenuicornis* O.S., its closest ally, by the lack of cell M_1 of the wings. The usual flight-period of the species is presumably in late May and the first week of June. The season of 1917 was very cold and backward, at least two weeks late by mid-June.

Sub-family *Tipulinae*.

Tribe *Tipulini*.

Tipula aperta, n. n. for *T. imperfecta* Alexander.

(Proc. Acad. Nat. Sci. Phila., Sept., 1915, p. 484–485) not *T. imperfecta* Brunetti (Rec. Indian Museum, vol. 9, 1913, p. 260).

Tipula sackeniana, sp. n.

Tricolor group; close to *T. tricolor* Fabr.; coloration reddish brown; male hypopygium without a pencil of reddish hairs on the sides of the caudal margin of the ninth tergite.

Male.—Length 16.8–17.5 mm.; wing 15.5 mm.

Female.—Length about 18 mm.; wing 17.5 mm.

Frontal prolongation of the head with the dorsal half pale brownish yellow, the ventral portion darker, with a dark, lateral line; palpi dark brown. Antennæ with the scape dark brown; flagellar segments light yellow, the basal enlargement brown. Vertex light gray in front and very narrowly along the inner margin of the eyes; remainder of the vertex brownish gray with a narrow, brown line; an orange spot on the sides of the vertex at the narrowest part; occiput similar in colour.

Mesonotal præscutum light gray laterally, the stripes reddish brown, narrowly margined with brown, median stripe narrowly bisected by a dark brown vitta, the interspaces dark; scutum reddish brown; scutellum and postnotum yellowish brown. Pleura brownish yellow, the posterior half, including the coxæ of the middle and hind legs, white pruinose. Halteres light brown, the knobs brown. Legs with the trochanters yellow, the fore coxæ darker; femora dark brown, the basal portion brighter, tibiæ and tarsi dark brown. Wings like those of *T. tricolor*; reddish gray, the costal region darker, a broad, pale streak in cell *M* and the anal angle paler; hyaline oblitative streak interrupted before the stigma.

Abdomen reddish yellow, the sides of the basal segments more yellowish, the terminal segments a little darker, the caudal margins of the segments very narrowly silvery. Male hypopygium with the ninth tergite produced caudally into an elongate median lobe, rounded across its tip which is darkened; no pencil of reddish bristles near the base of this lobe as in *tricolor*.

Habitat.—Eastern United States.

Holotype.—♂, Difficult Run, Virginia, July 25, 1915, (Alexander).

Allotype.—♀, Falls Church, Virginia, Sept. 26, 1915, (McAtee).

Paratopotypes.—2 ♂s; *paratype*.—♂, Beltsville, Maryland, Aug. 8, 1915, (McAtee); ♂, Stone Mt., Georgia, Aug. 3, 1913, (J. Chester Bradley); ♂, Ithaca, New York, Aug. 26, 1914, (Alexander).

Type in the collection of the author.

Similar to *T. tricolor*, but the entire body much more yellow, the thoracic stripes more reddish, the abdomen reddish yellow with the terminal tergites scarcely darkened; ninth tergite of the male without a pencil of hairs on either side of the median lobe. *T. fraterna* is smaller, the thoracic stripes brownish gray, sides of the abdominal segments broadly infuscated and the femoral tips brown.

***Tipula aprilina*, sp. n.**

Dejecta group; closely resembling *T. dejecta* Walker, except in the male hypopygium.

Male.—Length 11–11.2 mm.; wing 11.5 mm.

Region of the ninth tergite large, the caudal margin with the lateral angles produced caudad into prominent, blunt lobes that are blackened and furnished with small tubercles, the caudal margin truncated; between the lateral lobes two parallel, usually longer and slightly pointed lobes that are directed slightly ventrad, one situated on either side of the median line; outer pleural appendage very small, inconspicuous, elongate-cylindrical, yellowish; inner pleural appendage elongate, narrow; margins of the ninth sternite not widely separated beneath, carinated with a narrow, V-shaped caudal notch; at the point of the notch a pair of small, elongate, fleshy lobes.

Habitat.—Eastern United States.

Holotype.—♂, Mount Vernon, Virginia; Apr. 16, 1916, (W. L. McAtee).

Paratopotypes.—2 ♂s.

Types in the collection of the U. S. Biological Survey.

In *T. dejecta* Walker, the caudal margin of the ninth tergite bears a broad median lobe that has its posterior portion produced into two flattened, divergent horns; outer pleural appendage prominent, elongate, curved; inner pleural appendage short and broad, the ninth sternite with a broad V-shaped notch.

***Tipula helderbergensis*, sp. n.**

Hebes group; related to *latipennis* Loew.; general colour very dark; antennal flagellum uniformly brown; male hypopygium with the eighth sternite with a dense fringe of long, golden hairs.

Male.—Length 12–13 mm.; wing 13.8–14 mm.

Female.—Length 14.5 mm.; wing 14.4 mm.

Antennæ elongated, the flagellar segments dark brown throughout. Vertex behind dark gray with a diffuse, blackish median stripe.

Præscutum light gray with three darker gray stripes, the lateral stripes margined inwardly and anteriorly with darker; median stripe broadest, margined laterally with darker, the anterior portion likewise darker, somewhat blackish; scutum grayish, more brown medially, each lobe with two dark confluent blotches; scutellum brownish yellow, a little darker medially; postnotum

brownish, the anterior half most intense. Pleura silvery white, the mesosternum and mesopleura brownish. Halteres dark brown, the knobs and extreme bases of the stems pale. Legs with the coxæ yellow, the posterior coxæ dusted with white pollen; femora dull yellow, the tips dark brown; tibiæ and tarsi yellowish brown. Wings with the usual *hebes* pattern but this very heavy.

Abdomen brownish yellow, the tergites broadly margined with paler, and submargined with a narrow brown line, palest on the basal segments, on the fourth and succeeding tergites darker and suffusing the dorsum of the segments; on the five basal tergites with a dark brown, dorso-median line that is interrupted only by the pale, caudal margins of the segments; sternites brownish yellow, margined caudally with silvery, the eighth sternite dark brown, the lateral lobes margined inwardly with a dense brush of long, golden hairs. Male hypopygium with the eighth sternite with the caudal margin deeply incised, tripartite, the lobes fringed as described above. Blade-like process not of the elongate, spiral, horn-like structure of *latipennis* but flattened, the acute tips curved strongly downwards, the ventral carina obliquely and parallelly grooved or fluted; lower process longer, straight and more pointed, the expanded basal inner portion evenly rounded, suffused with brown, not rectangular or toothed, (as in *latipennis*) upper process a prominent flatted lobe, rounded apically, the whole lobe intensely chitinized, black, not at all hatchet-shaped as in *latipennis*. In *T. hebes* the lower process is very massive and with the basal inner portion produced proximad as an acute, chitinized spine; the blade-like processes very narrow toward the tip which is feebly expanded into a spatula; the upper process bifurcate, with two chitinized arms, the outer more pointed, the inner flattened and with the apex rounded.

Habitat.—Northeastern United States.

Holotype.—♂, Indian Ladder, Helderberg Mts., Albany Co., N.Y., July 3, 1916, (Alexander).

Allotopotype.—♀.

Paratopotype.—♂; *paratype*.—♂, Wells, Hamilton Co., N.Y., July 31, 1914, (Young); in the N. Y. State Museum.

Type in the collection of the author.

Tipula huron, sp. n.

Related to *T. submaculata* Loew.; wings with a heavy brown pattern.

Male.—Length 14 mm.; wing 15.6 mm.

Frontal prolongation of the head light yellow dorsally, more infuscated on the sides below, palpi light brown, the apical segments somewhat darker. Antennæ bicolorous, the flagellar segments beyond the first with the basal enlargement black, the remainder of each segment dull yellow. Anterior part of the vertex with three linear down dashes, the median one on the frontal tubercle. Vertex dusky gray with a brown more or less interrupted median line; occiput paler.

Præscutum pale gray with three broad, dark brown stripes, the median one broadly bisected by a reddish brown line; thoracic interspaces dull, infuscated; scutum light gray, the lobes brown, scutellum and postnotum dull brownish yellow. Pleura clear, light gray, the dorso-pleural membranes more yellow. Halteres brownish, paler basally. Legs with the coxæ whitish pollinose, the anterior coxæ more pink; femora dull yellow, the tips darkened; tibiæ dull yellow, the tips very narrowly darkened; tarsi brown. Wings hyaline or sub-hyaline with the costal region more yellow; a heavy brown and gray pattern arranged about as in *T. angulata*, *T. subfasciata*, etc. The brown areas including a large basal area, a blotch at the origin of the sector, along the cord and the wing-apex, all of these marks passing into gray on the caudal cells of the wing; a broad, white fascia beyond the cord extending entirely across the wing except the extreme apex of cell *M*₄. Venation: vein *R*₂ persists for its whole length.

Abdomen dull yellow above, the tergites indistinctly ringed caudally with silvery; tergites seven and eight, and the caudal portion of six, infuscated; an interrupted sub-lateral brown line extending from the middle of tergite two to the base of tergite five; sternites dull yellow. Male hypopygium very similar to *T. submaculata*, but the lateral points of the ninth tergites in the latter species are usually shorter and less acute.

Habitat.—Northern United States.

Holotype.—♂, Dodge Co., Wisconsin, June 5, 1910.

Type in the collection of the author.

The species is closest to *T. submaculata* Loew., but in the heavy wing pattern bears a superficial resemblance to the *angulata* and *subfasciata* groups, from both of which the structure of the hypopygium will readily distinguish it. The thoracic pattern of *submaculata* is quite different, the median stripe being dissected by a very broad, pale line.

***Tipula fultonensis*, sp. n.**

Arctica group; related to *T. longiventris* Loew., but the abdomen of the female is about half an inch shorter than in the same sex of that species (abdomen, *fultonensis*, 16 mm.; *longiventris* 26-27 mm.).

Female.—Length 22 mm.; wing 18.5 mm.; abdomen 16 mm.

Antennæ with the apical flagellar segments indistinctly bicolorous. Head dull gray, the vertex with a narrow, brown line.

Præscutum buffy with three broad, grayish brown stripes that are broadly margined with dark brown; thoracic interspaces without brown setigerous punctures; each lobe of the scutum with a small, anterior gray spot and a larger brownish area behind; postnotum gray with a narrow, brown median line. Pleura whitish gray pruinose. Legs with the coxæ grayish; femora dull yellow, the tips very pale brown; tibiæ similar; tarsi brown. Wings with a brownish, gray pattern.

Abdominal tergites dull brownish yellow, broadly trivittate with dark brown, the lateral margins of the abdominal segments dark brown basally, gray apically, the brown sublateral stripe being very sensitive on the basal portion of each segment, sternites grayish brown; valves of the ovipositor and the dorsal shield chestnut brown, the lateral margins of the valves with about ten acute teeth; extreme tips not divergent.

Habitat.—Northeastern United States.

Holotype.—♀, Mt. Buell, Sacandaga Park, Fulton Co., N.Y., altitude 1,500 ft., June 15, 1916, (C. P. Alexander).

Type in the collection of the author.

Compared with females of *longiventris*, the present species offers the following differences: thoracic dorsum buffy brown, rather than gray; wing pattern more brown, heavier; abdomen short; ovipositor and dorsal shield chestnut brown instead of almost black, and the tips are scarcely elongate and slightly divergent.

Tipula bergrothiana, sp. n.

Arctica group; related to *centralis* Loew., but smaller and the male hypopygium different; wings of female atrophied.

Male.—Length 10.5 mm.; wing 12.2 mm.

Female.—Length 17 mm.; wing about 2 m.

Frontal prolongation of the head grayish basally, more brownish apically; palpi brown. Antennæ with the scape rather bright yellow; flagellar segments rather uniformly brown, the basal enlargement a little darker than the rest of the segments and only slightly enlarged. Head with the vertex light gray, more suffused with brown behind and on the occiput.

Mesonotal præscutum gray, the median thoracic stripe almost obliterated, lateral stripes indicated only by the narrow, bright brown margins; remainder of mesonotum gray. Pleura dull gray. Legs with the coxæ brownish gray; trochanters and femora yellowish brown, the latter a little darkened outwardly; tibiæ and tarsi slightly darker. Halteres dirty pale brown, the knobs dark brown. Wings of the male elongate, in the type crumpled and this possibly the normal condition although the venation is not distorted. Wings brown and gray with hyaline areas as in *septentrionalis* Loew., etc.

Abdomen with the first tergite and the extreme base of the second gray, the remainder of the abdominal tergites brown; a dark brown median stripe; pleural membrane distinct dark brown, simulating a lateral stripe; sternites brown, the caudal margins narrowly pale. Male hypopygium small, simple, with the ninth tergite as in *centralis*, a shiny, heavily chitinated saucer, the caudal margin feebly concave medially to receive the inner pleural appendages; each caudal lateral angle produced into an acute tooth and the margin of the saucer on either side with a smaller similar tooth beyond mid-length. Ninth pleurite complete but small; outer pleural lobe moderate in size, flattened, the inner face somewhat convex, the outer face pale brown with abundant appressed hairs; a caudal inner angle of each pleurite produced dorsad in a somewhat similar flattened lobe whose outer face is shiny and abundantly provided with erect hairs; this lobe bends dorsad and somewhat cephalad inside the outer pleural appendage; ninth sternite with a deep, V-shaped median notch, beneath the point of

which the sclerite is elevated into a transverse ridge. Eighth sternite unarmed.

The female is similar to the male but the wings are greatly atrophied, the legs, especially the femora, incrassated and the tibiae and tarsi shortened. The abdominal tergites are brown with a broad, basal median area of black on each segment, the caudal margins brighter; lateral margins of the segments pale yellowish, sublaterally with a blackish band. Ovipositor of the *arctica* type, the ends of the valves rather blunt, the dorsal edge with four or five sharp teeth, the lateral margin with seven or eight similar but larger teeth.

Habitat.—Alaska.

Holotype.—♂, Koyukuk R., Alaska; Lat. 67–69 N.; Long. 151 W. (W. J. Peters). Summer of 1901.

Allotopotype.—♀.

Types in the collection of the U. S. National Museum.

***Tipula macrolaboides*, sp. n.**

Macrolabis group; related to *T. macrolabis* Loew of North-eastern North America but differing in the male hypopygium, the pleural lobes unarmed at their tips; the ninth tergite with an acute median lobe, the broad, lateral lobes deeply notched to form two smaller lobes.

Male.—Length 17–17 mm.; wing 17–18.6 mm.

Close to *macrolabis* except as follows:

Antennae of the type light brown throughout, the paratype uniform pale throughout.

Præscutum light gray with four narrow, chestnut brown stripes, the median one divided by a very broad ground vitta, pointed anteriorly; lateral stripes shorter, continued back on to the scutal lobes.

Male hypopygium with the ninth tergite extensive, with a broad and deep dorsal depression; produced caudad into a compressed median blade with a sharp dorsal edge or carina; the broad lateral lobes are deeply notched by a rounded incision to form two smaller lobules on either side, the proximal lobule longest, shiny, the lateral one with a sharp edge that is provided with a few stout bristles. Ninth pleurite complete, the caudal ventral angle produced caudad and slightly dorsad and proximad as a promi-

nent slender arm (as in *macrolabis*) this expanded on its apical half into a flattened, paddle-like blade that is unarmed.

Habitat.—Western Arctic America, south along the mountains into New Mexico.

Holotype.—♂, White Mts., N. Mex.; highest summit (11,092 ft.) Aug. 14, (C. H. T. Townsend).

Paratopotype.—♂, South Fork of Eagle Creek, Alt. 8,000 ft. Aug. 13, (C. H. T. Townsend).

Paratypes.—♂, Saldovia, Alaska, July 21, 1899, (Trevor Kincaid) Harriman Exped., 1899. Previously reported by Coquillett as *T. macrolabis* Loew.; ♂, Hudson Bay Territory (Loew. collection in the M. C. Z., part of the type-material of *macrolabis*).

Type in the collection of the U. S. National Museum.

***Tipula coracina*, sp. n.**

Coloration black and yellow; wings whitish subhyaline; male hypopygium simple in structure.

Male.—Length 9.8 mm.; wing 11.4 mm.

Frontal prolongation of the head short, black; nasus stout. Palpi dark brownish black. Antennæ blackish brown, the flagellar segments cylindrical, not incised; verticils very short, first flagellar segment with these bristles scattered, the remaining segments having them basal in position. Head black, finely punctured. Eyes with rather coarse ommatidia.

Pronotal scutum black; scutellum bright yellow on either side of the infuscated dorso-median depression. Mesonotal præscutum black, the interspaces with a few scattered paler hairs; scutum black except on the sides behind the wing-root where it is obscure yellowish; scutellum and postnotum black. Pleura dark brownish black, the extensive dorso-pleural membranes yellowish. Halteres brownish yellow. Legs with the coxæ and trochanters black; femora yellowish basally, the remainder of the legs dark brown. Wings whitish with a pale brownish tinge; stigma ill-defined, brownish; veins dark brown. Venation: R_2 short, straight; R_{2+3} longer than R_2 alone; cell M_1 open in both wings by the partial atrophy of vein M_1 ; cross vein M very long and prominent, inserted just beyond the fork of M on M_{3+4} .

Abdominal tergites and sternites dark brownish black, the segments broadly margined laterally and caudally with yellowish. Hypopygium simple, small; ninth tergite moderate in size; ninth

pleurite complete, elongate extending back to the eighth segment; outer pleural appendage an elongate fleshy lobe that is narrowed apically, clothed with long hairs that are directed backward; inner pleural appendage of somewhat similar structure, elongate, bearing on the inner face a small, sub-apical tooth; the surface is densely clothed with a short pubescence. Ninth sternite with a deep, V-shaped notch; eighth sternite unarmed.

Habitat.—Alaska.

Holotype.—♂, Point Barrow, Alaska, July 8, 1882 (John Murdock).

Type in the collection of the U. S. National Museum.

OBITUARY NOTICE.

WILLIAM D. KEARFOTT.

Canadian students of Lepidoptera will regret to record the death of William D. Kearfott, of Montclair, N.J., which occurred on November 12th, 1917, following an attack of apoplexy. Born in Berkeley County, West Virginia, on January 12th, 1864, he was thus, comparatively, a young man. We learn from Entomological News, January, 1918, that he was educated in primary schools in Richmond and Philadelphia. In his earlier years he was connected with the Morton Poole Company, of Wilmington, Delaware, and the International Navigation Company, of Philadelphia. He was associated also with the Worthington Steam Pump Company. Two years ago he formed the Kearfott Engineering Company. He was considered an authority on his branch of engineering.

Kearfott was a keen student of the Micro-lepidoptera, particularly of the family Tortricidæ, and was specially interested in Canadian species. During the years 1903 to 1908 he built up a large correspondence with collectors throughout Canada and, as a result, brought together a most important collection, particularly of the family mentioned. He was an exceedingly bright correspondent and ever ready to help us in the determination of specimens in the groups in which he specialized. Of late years, however, his eyes gave him considerable trouble, and he found it necessary to give up the study of the small moths he loved so well. His collection of Tortricidæ, which was particularly rich in Canadian material, is now in the American Museum of Natural History. His Pyralidæ is in the Barnes' collection.